

Claims:

1. A method for restoring a damaged rail seat located on a concrete rail tie, which comprises

5 applying a polymeric material comprising a poly(urethane-urea) material to the damaged rail seat located on the concrete rail tie; and

restoring the damaged rail seat by curing the polymeric material under ambient temperature and pressure conditions, the polymeric material being substantially sag resistant and maintaining its shape without substantial runoff
10 from the concrete rail tie during said restoring of the damage rail seat, wherein when the rail ties are restored, the rail seat maintains the gauge of a rail assembly under dynamic operating conditions.

2. The method of claim 1, wherein the damage rail seat is restored without requiring the use of non-ambient heat.

15 3. The method of claim 1, wherein the damage rail seat is restored without requiring the use of non-ambient pressure.

4. The method of claim 1, wherein the Gel Time of the polymeric material is not more than about five seconds.

5. The method of claim 1, wherein the Gel Time of the polymeric
20 material is not more than about one second.

6. The method of claim 1, wherein the Set Time of the polymeric material is sufficient for contouring the restored rail seat in situ without requiring the use of non-ambient heat.

7. The method of claim 1, wherein the polymeric material is cured at
25 a temperature as low as 45 °F.

8. The method of claim 1, wherein the modulus of the restored rail seat is increased to a level which will resist compressive loading and maintain the rail gauge of the rail assembly.

9. The method of claim 1, wherein the Elongation of the restored rail
30 seat is at least about 10%.

10. The method of claim 1, wherein the Shore D (24 hour) Hardness of the restored rail seat is at least about 65.

11. A method for restoring a damaged rail seat located on a concrete
5 rail tie, which comprises

applying a polymeric material comprising a poly(urethane-urea) material to the damaged rail seat located on the concrete rail tie; and

restoring the damaged rail seat by curing the polymeric material under ambient temperature and pressure conditions, the polymeric material being substantially sag resistant and maintaining it's shape without substantial runoff from the concrete rail tie during said restoring of the damage rail seat, the restored rail seat having a modulus which is increased to a level which will resist compressive loading and maintain the rail gauge of the rail assembly.

10 12. The method of claim 11, wherein the damage rail seat is restored
15 without requiring the use of non-ambient heat.

13. The method of claim 11, wherein the damage rail seat is restored without requiring the use of non-ambient pressure.

14. The method of claim 11, wherein the Gel Time of the polymeric material is not more than about five seconds.

20 15. The method of claim 11, wherein the Gel Time of the polymeric material is not more than about one second.

16. The method of claim 11, wherein the Set Time of the polymeric material is sufficient for contouring the restored rail seat in situ without requiring the use of non-ambient heat.

25 17. The method of claim 11, wherein the rail ties having the restored rail seat maintains the gauge of a rail assembly under dynamic operating conditions.

18. The method of claim 11, wherein the polymeric material is cured at a temperature as low as 45 °F.

30 19. The method of claim 11, wherein the Elongation of the restored rail seat is at least about 10%.

20. The method of claim 11, wherein the Shore D (24 hour) Hardness of the restored rail seat is at least about 65.

21. A method for restoring a damaged rail seat located on a concrete rail tie, which comprises

5 applying a polymeric material comprising a poly(urethane-urea) material to the damaged rail seat located on the concrete rail tie; and

restoring the damaged rail seat by curing the polymeric material under ambient temperature and pressure conditions, the polymeric material being substantially sag resistant and maintaining its shape without substantial runoff
10 from the concrete rail tie during said restoring of the damage rail seat, without requiring the use of non-ambient heat and pressure, wherein when the rail ties are restored, the rail seat maintains the gauge of a rail assembly under dynamic operating conditions.

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